

Fall Foliar Sprays For Peaches and Almonds

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Fall can be an excellent time to apply certain nutrients if trees are deficient.

Nitrogen. Nitrogen utilized by trees and vines for early season shoot and fruit growth comes from reserves stored in the roots and other woody tissues of the plant. This is why it is important to enter into dormancy with adequate nitrogen reserves. UC Extension pomologist Scott Johnson has shown that a low biuret urea foliar spray just prior to natural leaf senescence is an excellent method of supplying nitrogen to peach trees. At least 80% of the nitrogen is absorbed into the leaf within 24 hours. The nitrogen is then readily translocated out of the leaf and into long-term storage. Trees low in nitrogen because of nematodes, a high water table or other root problems should certainly benefit from this spray. This is also an excellent way to provide nitrogen without risk of ground water contamination.

Each spray supplies about 50 pounds of **actual N** per acre. That means if a granular formulation of low biuret urea is used (which is almost 50% N), you need to apply about 100 pounds of product per acre. If a second application is necessary, it should be applied at least two weeks after the first application. Within a few days, you should start to see some burn along leaf margins and at the tips. Defoliation will probably progress a little more quickly than normal. Almond growers - although preliminary testing with low biuret foliar sprays in almonds has not shown any flower bud burn, 30-40 pounds of N may be safer. Zinc sulfate and/or boron can be combined with a foliar urea application.

Zinc. Zinc deficiency is common in sandy soils of Stanislaus County, especially in young, vigorous trees. Zinc deficiency can also be a problem in orchards with a history of manure applications. Deficient trees are easiest to spot in the spring when bloom and vegetative growth may be delayed. Internodes on zinc deficient trees are short and leaves are small and chlorotic. Mildly deficient trees have chlorotic areas between the veins and are generally a little smaller than normal. Fruit size is also reduced. To correct a zinc deficiency, apply 10-15 pounds per acre of zinc sulfate in a foliar spray at the beginning of leaf drop. This should result in more rapid defoliation. Although this is usually a safe practice, we think a very small amount of shoot die-back occurred in one Stanislaus County peach orchard last year from a fall zinc application.

Boron. Most Stanislaus County almond and stonefruit orchards east of the San Joaquin River are naturally low in boron. Flood irrigation with our "pure" district water contributes almost no boron and actually helps leach the boron (and other nutrients) out of the soil. On the west side of the county, boron is rarely deficient and a few areas have toxicity problems.

Boron is essential for pollen tube germination and fertilization. The only symptom of moderate boron deficiency in almonds and peaches is low fruit set. To determine the boron status of your almond trees, sample about 50 hulls at harvest. If you did not collect hulls at harvest, collect hulls from the few nuts remaining in the trees. Don't mix varieties. Laboratory tests showing hull levels less than 80 ppm boron indicate deficiency while levels above 200 ppm are approaching toxicity.

Studies conducted a few years ago in Stanislaus County showed that post-harvest boron sprays can significantly increase yields in deficient orchards. Even trees with hull boron levels as high as 120 ppm may benefit from a post-harvest application. Boron sprays are probably most effective after a heavy crop or when the following spring is cool with marginal conditions for pollination. Typical rates are 0.2 – 0.4 pounds of **actual boron** (i.e. 1-2 pounds of a 20% B

product) per acre. The boron is rapidly absorbed and translocated into the flower buds where it will be used next spring. These post-harvest sprays **will not** correct a boron deficiency. In fact, you probably will not see much of a B increase (if any) in hull samples next year. To correct a boron deficiency, apply 10-20 pounds of a 20% boron product per acre in a broadcast soil application. Boron applied in a concentrated band will kill roots. Liquid boron materials can be tank mixed in herbicide strip sprays. Boron can be applied to the soil any time of year although some leaching can occur in sandy soils during winters with unusually high rainfall. Go slow with boron – it is easy to go from deficient to toxic in a hurry. Monitor boron levels with hull samples at harvest each year and adjust your boron fertilization as needed. Correcting boron deficiencies is a cheap way to increase production.